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From: "Moore, David (ECY)" <DMOO461@ECY.WA.GOV>
To: Brian Nickel/R10/USEPA/US@EPA
Delivered Date: 07/20/2009 09:24 AM PDT
Subject: RE: State line analysis for DO and pH

Thanks Brian. Do you know if there's an easy way to identify a TP and DO load at the border for the Idaho sources to meet (allocations in other words)? Are these it depending on the scenario chosen?

Dave

From: Nickel.Brian@epamail.epa.gov [mailto:Nickel.Brian@epamail.epa.gov]
Sent: Monday, July 20, 2009 9:00 AM
To: Moore, David (ECY)
Cc: Cope.Ben@epamail.epa.gov
Subject: State line analysis for DO and pH

Hi Dave,

No one expected the state line to be an issue, but we need to look at the model output to make sure. See attached; this is just a summary file since the time series model output file itself is huge.

The model indicates that the Idaho sources will not cause violations of DO, pH, or temperature criteria at the State line, under any of the three scenarios. The maximum DO decrease at the State line (when no source is < 8.2 mg/L) is 0.08 mg/L; the criterion is 0.2. The maximum impact to pH is an increase of 0.14 – 0.16 pH units, or a decrease of 0.04 pH units; the standard is a pH change of 0.5 units. The maximum temperature increase, when "no source" is greater than or equal to 20 *C, is 0.13 *C; the standard is an increase of 0.3 *C. Since effluent flows are re-routed to cold ground water in the "no source" scenario, which would tend to increase the temperature impact of the scenarios, this is a conservative number.

Note that I intentionally reversed the subtraction for delta temperature from the way I calculated the delta DO. That way, for both parameters, positive numbers indicate a detriment to water quality (higher temperature or lower DO).

Thanks,
Brian Nickel, E.I.T.

Environmental Engineer

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